

What Is Claimed Is:

1. An apparatus for electrostatic spray application of a coating material to a target, comprising:

a target holder which holds a target at a first electrical potential;

a coating discharge nozzle body formed from an electrically conductive material, said nozzle having a nozzle orifice for discharging the coating material; and

means for applying to the nozzle body a second electrical potential to electrostatically discharge the coating material from the orifice toward the target.

2. The electrostatic spray coating apparatus of claim 1, further comprising:

a coating material reservoir; and

a coating material conduit, wherein a first end of the conduit is in communication with the coating material in the coating material reservoir, a second end of the conduit is in communication with the nozzle, and the coating material flows from the reservoir through the conduit and out of the orifice when the second electrical potential is applied to the nozzle body.

3. The electrostatic spray coating apparatus of claim 1, further comprising:

a spark discharge voltage generator,

wherein the spark discharge voltage generator is electrically connected to the target holder and generates a voltage spike sufficient to remove an oxide layer from at least one contact point of the target where the target contacts the target holder.

4. The electrostatic spray coating apparatus of claim 3, wherein, after the voltage spike is applied to the target holder, the target is electrically connected to a ground potential.

5. The electrostatic spray coating apparatus of claim 1, wherein

the target is a medical device, and

the coating material contains a therapeutic agent.

6. The electrostatic spray coating apparatus of claim 5, wherein the medical device is a stent.

7. The electrostatic spray coating apparatus of claim 1, further comprising:
a pressurized fluid source; and
a fluid passageway, wherein a first end of the passageway is in fluid communication with the pressurized fluid in the pressurized fluid source, a second end of the passageway is in fluid communication with the nozzle orifice, and the pressurized fluid flows from the pressurized fluid source through the fluid passageway and out of the nozzle orifice.

8. A method for electrostatic spray application of a coating material to a target, comprising the steps of:

providing a target holder which holds a target;
providing a coating discharge nozzle body formed from an electrically conductive material, said nozzle body having a nozzle orifice for discharging the coating material;
applying a first electrical potential to the target; and
applying a second electrical potential to the nozzle body to cause the coating material to be discharged from the nozzle orifice toward the target.

9. The electrostatic spray coating method of claim 8, further comprising, prior to the step of applying a second electrical potential to the nozzle body, the step of:

generating a voltage spike with a spark discharge voltage generator sufficient to remove an oxide layer from at least one contact point of the target where the target contacts the target holder.

10. The electrostatic spray coating method of claim 9, wherein, after the voltage spike is applied to the target holder, the target is electrically connected to a ground potential.

11. The electrostatic spray coating method of claim 8, wherein
the target is a medical device, and
the coating fluid is contains a therapeutic agent.

12. The electrostatic spray coating method of claim 11, wherein the medical device is a stent.

13. The electrostatic spray coating method of claim 8, further comprising the step of: providing a pressurized fluid in fluid communication with the nozzle orifice; and ejecting the pressurized fluid from the nozzle orifice to cause the coating material to be discharged from the nozzle orifice toward the target.

14. A method for electrostatic application of a coating material to a target, comprising the step of:

generating a voltage spike with a spark discharge voltage generator sufficient to remove an oxide layer from at least one contact point of the target where the target contacts a target holder.

15. The electrostatic spray coating apparatus of claim 14, wherein, while the voltage spike is applied to the target holder, the target is electrically connected to a ground potential.

16. The electrostatic coating method of claim 14, wherein the target is a medical device, and the coating fluid contains a therapeutic agent.

17. The electrostatic coating method of claim 16, wherein the medical device is a stent.